

## Trajectory-Based Operations (TBO) Cost Estimation, Phase I

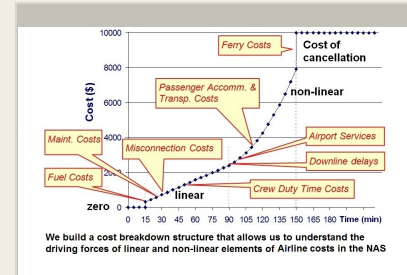
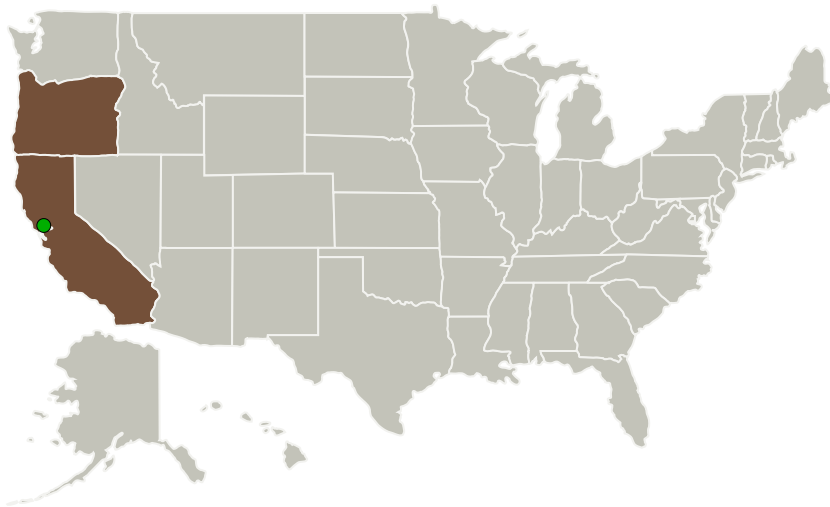
Completed Technology Project (2015 - 2015)



## Project Introduction

The Innovation Laboratory, Inc., proposes to build a tool to estimate airline costs under TBO. This tool includes a cost model that explicitly reasons about traffic demand and weather conditions in the National Airspace System (NAS), mathematical models for weather translation and ATM-impact, line of flight impacts of delay propagation, large quantities of historical NAS and airline data ("Big Data"), and fixed and variable cost accounting.

## Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
The Innovation Laboratory, Inc.	Lead Organization	Industry Women-Owned Small Business (WOSB)	Portland, Oregon
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

## Primary U.S. Work Locations

California	Oregon
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## Project Transitions



**June 2015:** Project Start



**December 2015:** Closed out

**Closeout Summary:** Trajectory-Based Operations (TBO) Cost Estimation, Phase I Project Image

**Closeout Documentation:**

- Final Summary Chart Image(<https://techport.nasa.gov/file/137364>)

## Images



### Briefing Chart Image

Trajectory-Based Operations (TBO)  
Cost Estimation, Phase I  
(<https://techport.nasa.gov/image/133867>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

The Innovation Laboratory, Inc.

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Jimmy Krozel

**Co-Investigator:**

Jimmy Krozel

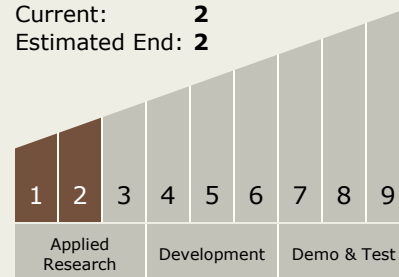
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## Technology Maturity (TRL)

Start: **1**  
Current: **2**  
Estimated End: **2**



## Technology Areas

### Primary:

- TX01 Propulsion Systems
  - └ TX01.3 Aero Propulsion
    - └ TX01.3.1 Integrated Systems and Ancillary Technologies

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System